IN THE CLAIMS

Claim 1. (Currently Amended) A method of determining ~~in~~ a volume of ~~liquified~~ liquefied gas in a cryogenic storage tank having a liquid space and a head space, comprising the steps of:

entering and storing the dimensions and orientation of the storage tank;

entering and storing the type of liquefied gas contained in said tank;

entering and storing a stratification coefficient;

~~storing a lookup table of conversion coefficients used to covert a head pressure value into an estimated average pressure value, said conversion coefficients being accessed according to the entered dimensions and orientation of the storage tank;~~

storing a lookup table of density constants, stored according to the estimated average pressure, and liquid type;

measuring the differential pressure between the liquid space and the head space;

measuring the pressure at the head space;

calculating an estimated average pressure using the measured head pressure and the stratification coefficient;

reading a liquid density value from ~~a~~ the look-up table of density constants using the calculated estimated average pressure and the entered liquid type; and

computing ~~in~~ a liquid volume in said tank as a function of said differential pressure, liquid density, tank dimensions, tank orientation, and type of liquefied gas.

Claim 2. (Original) The method of Claim 1, wherein the step of computing the liquid volume further comprises the step of displaying the liquid volume on a display.

Claim 3. (Original) The method of Claim 1, wherein the step of storing the dimensions of the storage tank comprises the step of storing a tank height and diameter.

Claim 4. (Original) The method of Claim 1, further comprising the steps of:

storing an alert volume; and

generating an alert signal if the calculated liquid volume is below the alert volume.

Claim 5. (Withdrawn)

Claim 6. (New) The method of Claim 1 where the ~~conversion coefficients are~~ stratification coefficient ~~constants that are~~ is determined by tank height, orientation, operating pressure, refill level and refill frequency to correct saturation pressure for stratification in a tank.

Claim 7. (New) A method of determining a volume of a cryogenic liquid in a tank having a liquid space and a head space, comprising the steps of:

storing a lookup table of conversion coefficients;

storing a lookup table of density constants;

measuring the differential pressure between the liquid space and the head space;

measuring the pressure at the head space;

calculating an estimated average pressure using the measured head space pressure and a conversion coefficient selected from the lookup table of conversion coefficients;

reading a liquid density value from the look-up table of density constants using the calculated estimated average pressure; and

computing a liquid volume in said tank as a function of said differential pressure and liquid density.

Claim 8. (New) The method of Claim 7, wherein the step of computing the liquid volume further comprises the step of displaying the liquid volume on a display.

Claim 9. (New) The method of Claim 7, further comprising the steps of:

storing an alert volume; and

generating an alert signal if the calculated liquid volume is below the alert volume.

Claim 10. (New) The method of Claim 7 where the conversion coefficients are stratification constants that are determined by tank height, orientation, operating pressure, refill level and refill frequency to correct saturation pressure for stratification in a tank.

Claim 11. (New) A method of determining a volume of a cryogenic liquid in a tank having a liquid space and a head space, comprising the steps of:

entering and storing a stratification coefficient that accommodates for variations in liquid stratification as a height of the cryogenic liquid in the tank increases, orientation, operating pressure, refill level and refill frequency;

storing a lookup table of density constants;

measuring the differential pressure between the liquid space and the head space;

measuring the pressure at the head space;

calculating an estimated average pressure using the measured head space pressure and the stratification coefficient;

reading a liquid density value from the look-up table of density constants using the calculated estimated average pressure; and

computing a liquid volume in said tank as a function of said differential pressure and liquid density.

Claim 12. (New) The method of Claim 11, wherein the step of computing the liquid volume further comprises the step of displaying the liquid volume on a display.

Claim 13. (New) The method of Claim 11, further comprising the steps of:

storing an alert volume; and

generating an alert signal if the calculated liquid volume is below the alert volume.